

Amplifiers

Model 30S1G6C

Features:

- 30 Watts CW, 1.0 - 6.0 GHz
- Class A design
- Built-in fault monitoring and protection
- Remote control: Ethernet, USB, GPIB, fiber-optic serial, RS-232
- Modular design for easy maintenance and service
- Low acoustical noise

Applications:

- EMC (military, aviation, automotive, commercial)
- Radiated and conducted EMC testing
- General purpose, antenna, and component testing

To view our full amplifier portfolio visit:

www.arworld.us/amplifiers

AR RF/Microwave Instrumentation

160 Schoolhouse Rd

Souderton, PA 18964

215.723.8181

info@arworld.us

www.arworld.us

ISO 9001:2015 Certified

ISO 17025 :2017 Accredited



The Model 30S1G6C is a solid-state, Class A design, self-contained, air-cooled, broadband power amplifier designed for applications where instantaneous bandwidth, high gain and linearity are required. It will provide a minimum of 30 W across its operating bandwidth. Protection from input overdrive beyond 0 dBm is provided as well as protection from various failure conditions including over-temperature and power supply faults.

A front panel display indicates the operational status and fault conditions. All amplifier control functions, and status indications are available remotely using GPIB/IEEE-488, RS-232, fiber-optic serial, USB, or Ethernet. Interface connectors are located on the back panel. Local and remote operation is managed by a switch on the front panel.

This is a multiple purpose amplifier. The low level of spurious signals and linearity make it ideal for use as a driver in testing wireless and communication components and subsystems. By covering such a wide bandwidth, it is suitable for 5G testing applications.

Due to the Class A design, it is also suitable for EMC Test applications where continued operation into high VSWR loads including open and short circuits is required.

The export classification for this equipment is EAR99. These commodities, technology or software are controlled for export in accordance with the U.S. Export Administration Regulations. Diversion contrary to U.S. law is prohibited.

Model 30S1G6C

- 30 W
- 1.0 - 6.0 GHz

Electrical Specifications					
Parameter	Symbol	Minimum	Typical	Maximum	Unit
Rated Power Output	PSAT	30	40	>65	W
Input for Rated Output	Pin			1.0	mW
				0	dBm
Power Output @ 1 dB Compression	P1dB	25	35	>60	W
Power Output @ 3 dB Compression	P3dB	35	45	>70	W
Operating Frequency	BW	1.0		6.0	GHz
Gain (Small Signal)		46	48	50	dB
Gain Reduction Adjustment (when below compression)		10	12	15	dB
Flatness	ΔG		± 1.5	± 2.0	dB
Input Impedance	Z in		50		Ohm
			1.5:1	2.0:1	VSWR
Output Impedance	Z out		50		Ohm
3 rd Order Intercept	IP3		+54		dBm
Noise Figure	NF		10		dB
Harmonic Distortion @ 30 W	H2, H3		-30	-20	dBc
Spurious			-73		dBc
Power Consumption	PD			400	W

Absolute Maximum Rating				
Exposure to maximum rating conditions for extended periods may reduce device reliability. Exceeding any of the limits listed here may result in permanent damage to the device.				
Parameter	Minimum	Typical	Maximum	Unit
RF Drive		0	+13	dBm
RF Load		1:1	∞	VSWR
AC Power (single phase)	100		240	VAC
AC Power	47		63	Hz
Ambient Temperature	+5	+25	+40	°C
Storage Temperature	-20		+50	°C
Altitude			2000	m
Shock/Vibration	IAW MIL-TD-810G, Method 514 in process			



Model 30S1G6C

- 30 W
- 1.0 - 6.0 GHz

Mechanical Specifications		
Parameters	Nominal	Unit
Dimensions (With Cabinet) (W x H x D)	51.0 x 17.0 x 65.3	cm
	20.1 x 6.7 x 25.7	in
Dimensions (No Cabinet) – 3U for 19" Rack	48.3 x 13.4 x 65.3	cm
	19.0 x 5.3 x 25.7	in
Weight (With Cabinet)	25.9	kg
	57.0	lb
Weight (No Cabinet)	15.3	kg
	33.75	lb
Cooling	Forced air (self-contained fans) Side inlets / rear outlet $\Delta t = +7^{\circ}\text{C}$ (typical)	
Acoustical Noise (Measured @ 1 meter from the front)	54 (typical)	dBA

Regulatory Compliance	
Type	Standard
EMC	EN 61326-1
Safety	UL 61010-1
	CAN/CSA C22.2 #61010-1
	CENELEC EN 61010-1
RoHS	Directive 2011/65/EU
Export	EAR99

Connector interfaces	
Function	Type
RF input	N female (50 Ω)
RF output	N female (50 Ω)
IEEE-488	24-pin female
RS-232	9-pin subminiature D female
RS-232 (fiber optic)	ST
USB 2.0	Type B
Ethernet	RJ-45
Interlock	15-pin subminiature D female

Ordering Options

30S1G6C	-	N	-	N	-												
Model		RF IN Conn Location, Type		RF OUT Conn Location, Type		Enclosure No Enclosure											
		<table border="1"> <thead> <tr> <th colspan="2">N-Connector</th> </tr> </thead> <tbody> <tr> <td>Front</td> <td>F</td> </tr> <tr> <td>Rear</td> <td>R</td> </tr> </tbody> </table>		N-Connector		Front	F	Rear	R	<table border="1"> <thead> <tr> <th colspan="2">Enclosure</th> </tr> </thead> <tbody> <tr> <td>Enclosure</td> <td>E</td> </tr> <tr> <td>No Enclosure</td> <td>NE</td> </tr> </tbody> </table>		Enclosure		Enclosure	E	No Enclosure	NE
N-Connector																	
Front	F																
Rear	R																
Enclosure																	
Enclosure	E																
No Enclosure	NE																

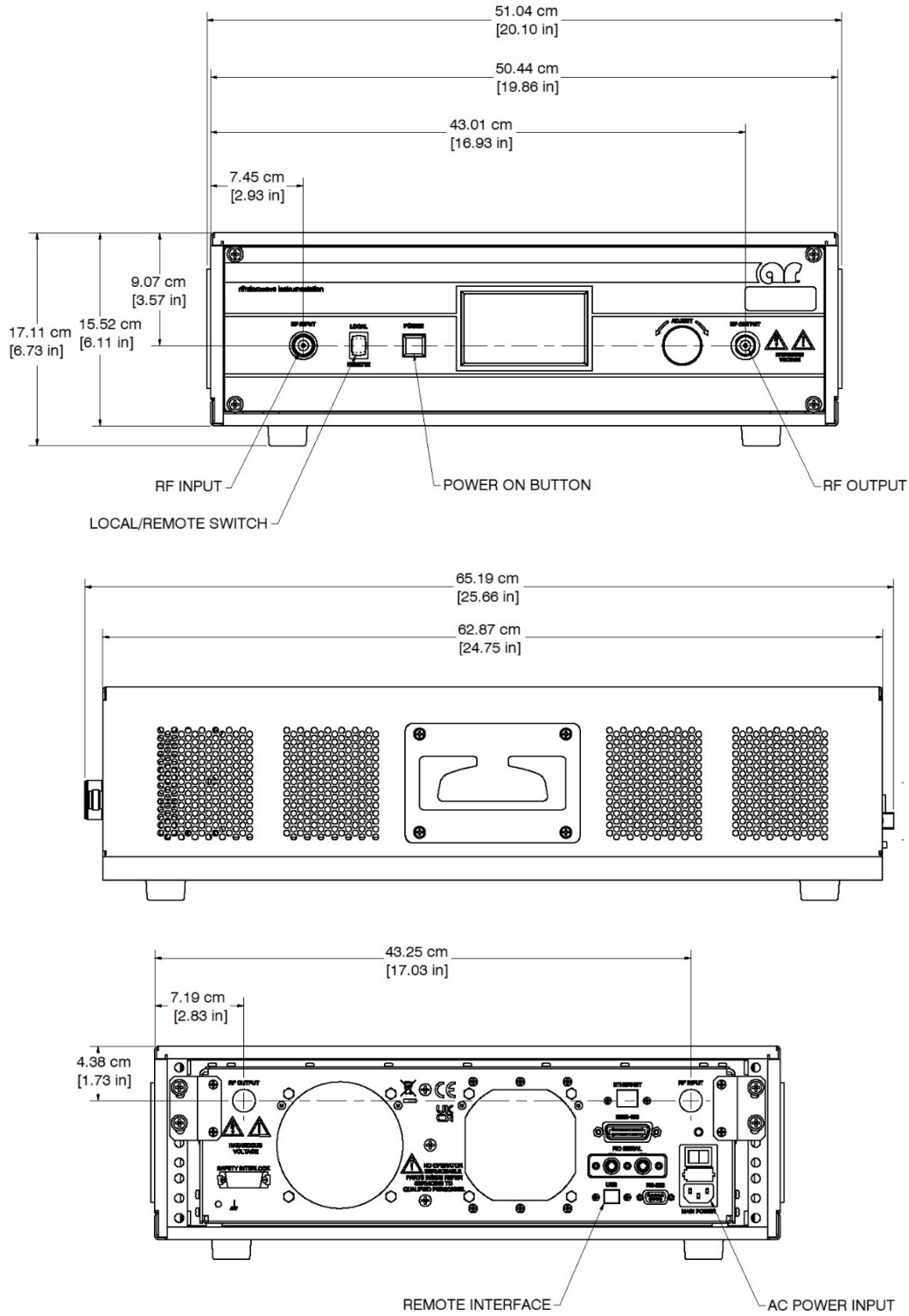
AR RF/Microwave Instrumentation • 160 Schoolhouse Rd, Souderton, PA 18964 • 215-723-8181 • info@arworld.us • www.arworld.us • ISO 9001:2015 Certified • ISO 17025:2017 Accredited



Model 30S1G6C

- 30 W
- 1.0 - 6.0 GHz

Envelope Drawing

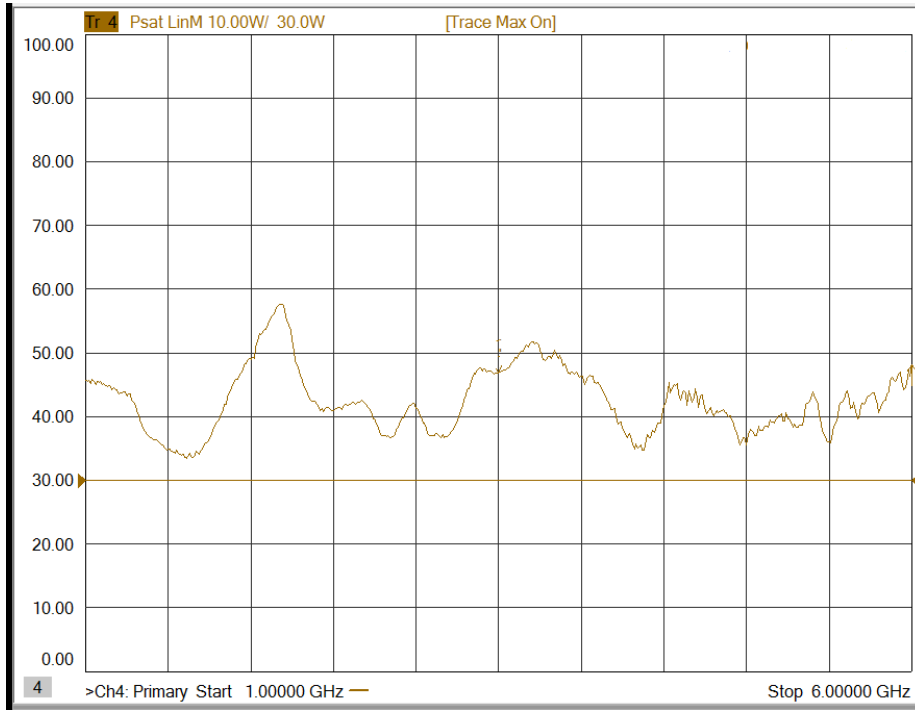


AR RF/Microwave Instrumentation • 160 Schoolhouse Rd, Souderton, PA 18964 • 215-723-8181 • info@arworld.us • www.arworld.us • ISO 9001:2015 Certified • ISO 17025:2017 Accredited

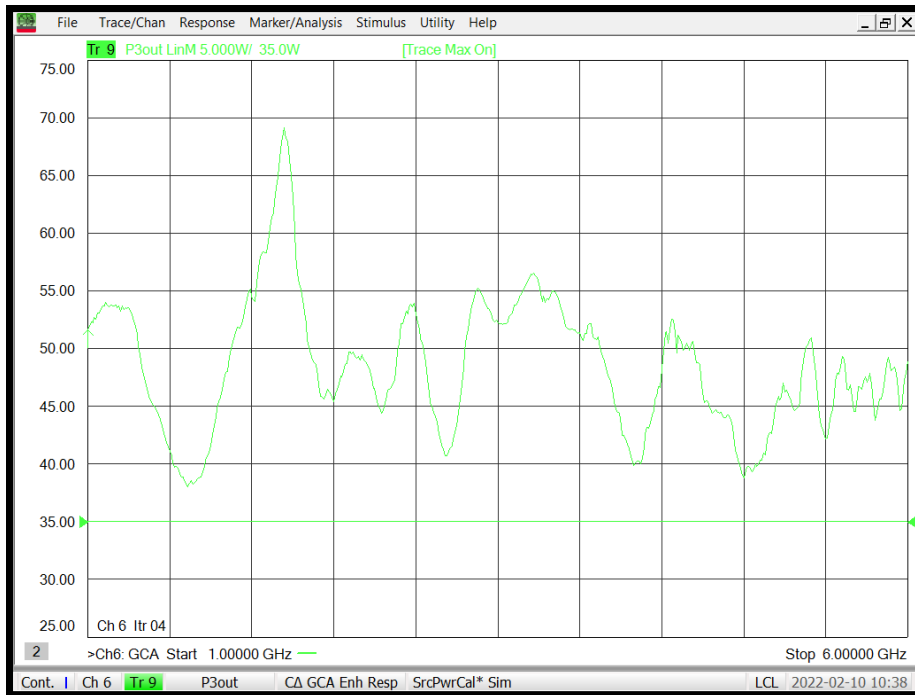
Model 30S1G6C

- 30 W
- 1.0 - 6.0 GHz

TYPICAL PSAT POWER @ 0 dBm INPUT



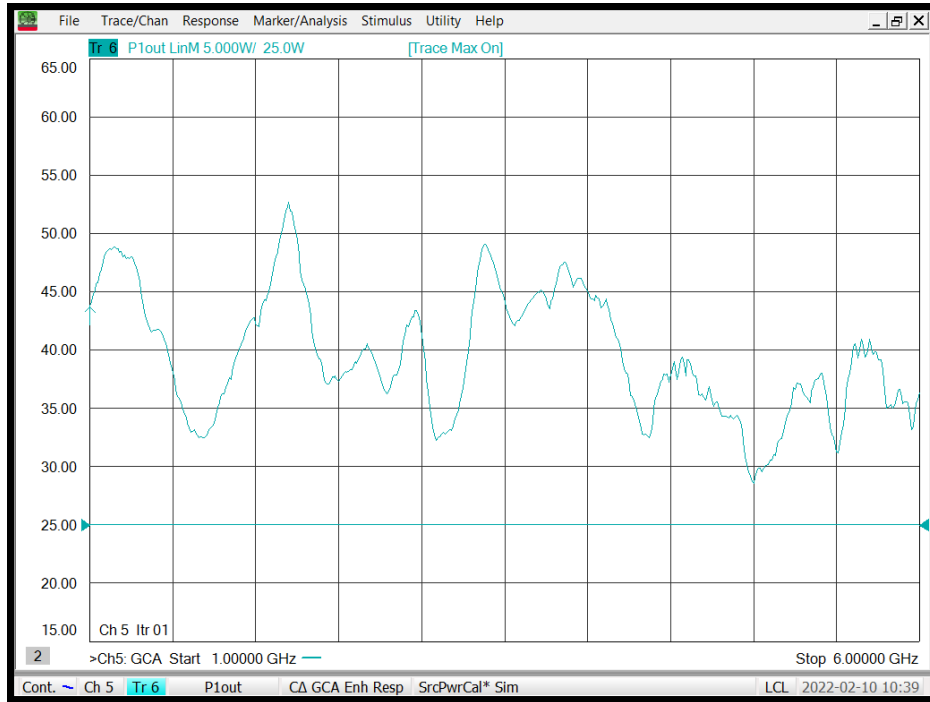
TYPICAL POWER @ P3 dB COMPRESSION



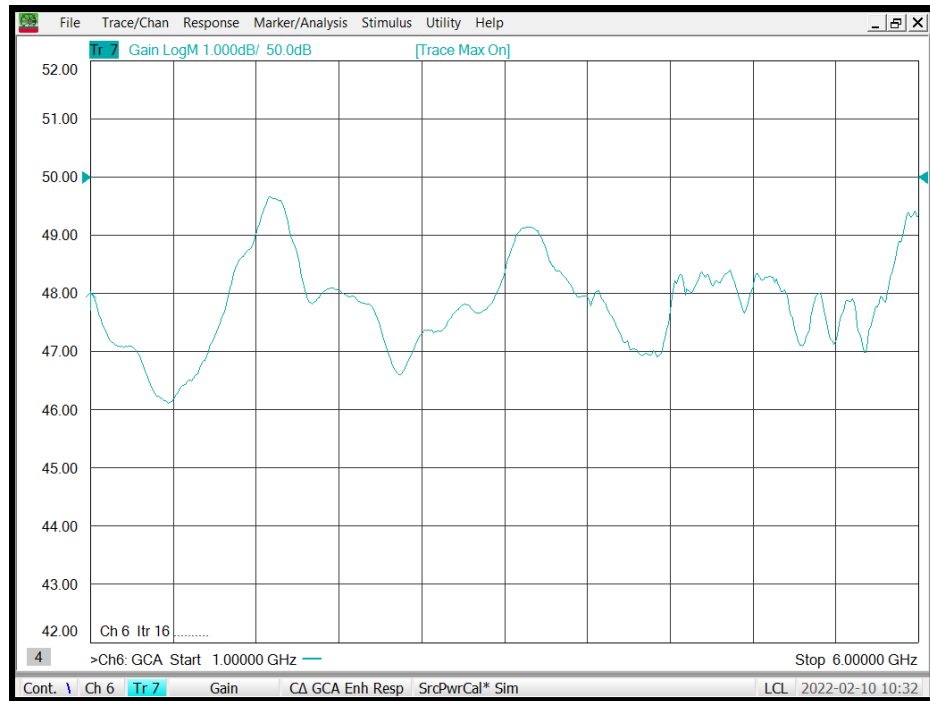
Model 30S1G6C

- 30 W
- 1.0 - 6.0 GHz

TYPICAL POWER @ P1dB COMPRESSION



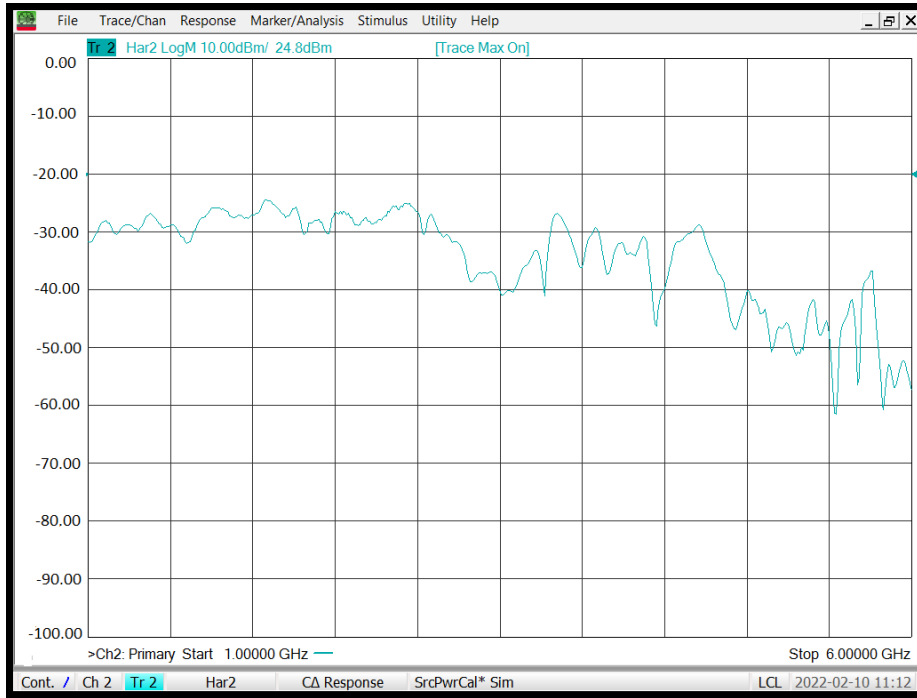
TYPICAL SMALL SIGNAL GAIN @ -20 dBm INPUT



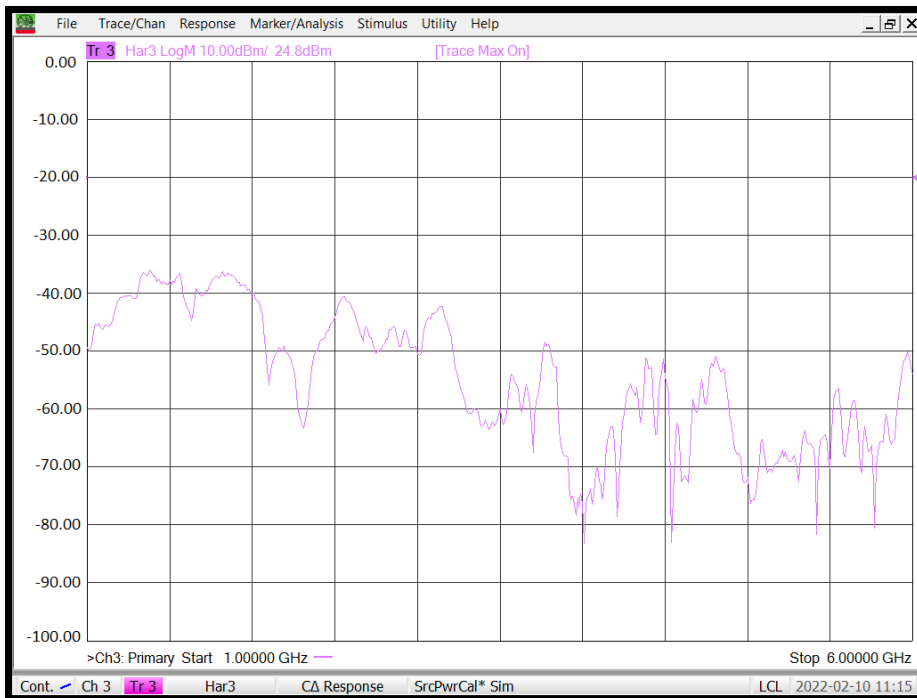
Model 30S1G6C

- 30 W
- 1.0 - 6.0 GHz

TYPICAL 2ND HARMONIC @ 30 W OUTPUT



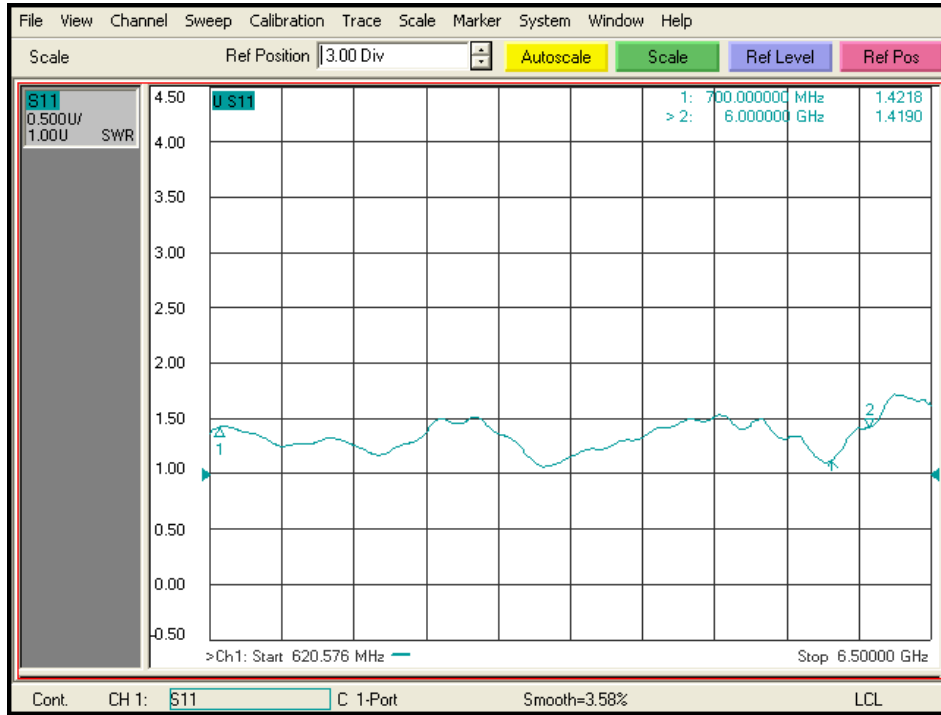
TYPICAL 3RD HARMONIC @ 30 W OUTPUT



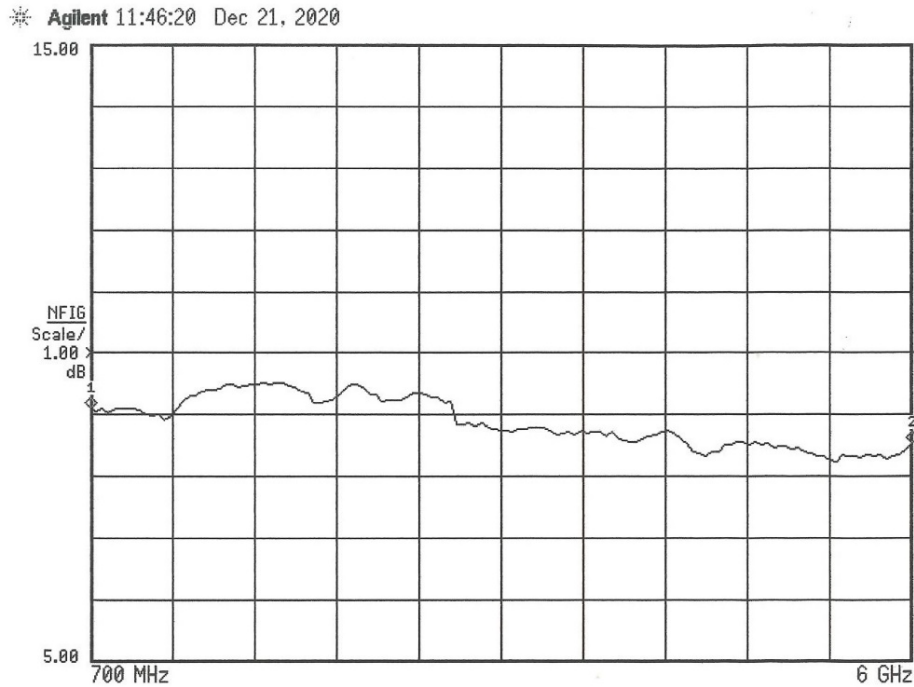
Model 30S1G6C

- 30 W
- 1.0 - 6.0 GHz

TYPICAL INPUT VSWR



TYPICAL NOISE FIGURE



AR RF/Microwave Instrumentation • 160 Schoolhouse Rd, Souderton, PA 18964
 To order AR Products, call: 215.723.8181. For an applications engineer, call: 800.933.8181. Direct to Service call: 215.723.0275 or email: service@arworld.us
 For Faxing Orders: 866.859.0582 (Orders Only Please) info@arworld.us
 Approved for public release by AR RF/Microwave Instrumentation ISO 9001:2015 Certified • ISO 17025:2017 Accredited

Revision 021422

